PATENT APPLN. NO. 10/507,423
RESPONSE UNDER 37 C.F.R. §1.111

PATENT
NON-FINAL

REMARKS

Claims 8-11 and 13-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The preferred range recited in claim 8 has been deleted. New claim 19 has been added directed to the preferred range.

Claims 9 and 10 have been amended to delete the terminology "for example".

Claims 11 and 17 have been amended to delete the terminology "such as". The claims have been limited to the exemplified property or properties. I.e., claim 11 has been amended to recite --the desired ~~fibre dimension property, such as the fibre length,~~ fibre length--. Similarly, claim 17 has been amended to recite --which represent ~~a certain fibre dimension, such as the~~ fibre length and/or [[the]] coarseness--.

The preamble of each of claims 13 to 16 has been amended to read --A method according to claim 1, characterized in that ~~in case of~~ the material is softwood and, ...--.

The amendments to the claims are believed to overcome the 35 U.S.C. 112 rejections of the claims. Removal of the 35 U.S.C. 112

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rejections is believed to be in order and is respectfully requested.

Claims 1-13 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quick et al. (U.S. Patent No. 6,231,721) (hereinafter: "Quick") in view of Skatter et al. (U.S. 2004/0057551 A1) (hereinafter: "Skatter"). Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quick and Skatter as applied to claim 1 above, and further in view of Rydholm (Sven A. Rydholm, Pulping Processes, Interscience Publishers, Sept. 1967) (hereinafter: "Rydholm").

Applicants respectfully submit that the Office has not properly supported a case of *prima facic* obviousness. The prior art fails to provide a motive to combine Quick and Skatter and, with respect to claims 14-16, Rydholm, as proposed in the Action.

The claims of the present application are directed to a method for adjusting the fibrous properties of pulp to a preselected level. According to the method in the manufacture of the pulp, a wood material is used, which is classified by log or group of logs according to the number of annual rings into categories that represent a certain fibre dimension property. The claims are also directed to a method for manufacturing pulp that has preselected fibre dimension properties and to a method for manufacturing a

fibrous product that has preselected fibre dimension properties. Pulp, the fibre dimension properties of which are at the preselected level, can be used in the manufacture of paper, board or packaging materials or in any other processes that utilize pulp.

The present invention is based on the finding that the number of annual rings of a tree has an impact on the tree's fibre length. When the wood material is classified into categories according to the number of annual rings, and wood material is taken from a certain category, a wood material with a homogenous fibre length is obtained. It is essential for the invention that the wood material is studied "by log" or by "groups of logs". By "log" is meant the cut parts of a harvested wood. When logs are known to be close to one another in terms of the numbers of annual rings, "by groups of logs" correspondingly refers to a group of two or more logs. According to the method of the present invention the number of annual rings is determined for each cut part of a harvested tree or for a group of cut parts.

A remarkable advantage of the present invention is that the classification of the wood material according to the number of annual rings can be carried out mechanically or by modeling. The classification can be carried out at any processing stage after felling the tree and before pulping (when making chemical pulp) or

after felling the tree and before grinding (when making any pulping, mechanical or chemi-mechanical or chemical pulp). It is preferable to define the number of annual rings as early as at the cutting machine in the forest in connection with felling the wood, since it decreases the need to classify the logs at a later stage.

A remarkable advantage of the method of the present invention is that when the raw material is classified into different categories according to the number of annual rings, certain desired fibre lengths and dimensions as well as extraordinary smoothness levels are achieved. This can be seen in Examples 1, 3, 5, 7 and 9 and Figures 1, 3, 5, 7 and 9. On the other hand, when the cut trees were classified according to the diameter, the fibre lengths and the fibre coarsenesses were partly or fully overlapping and the classification by diameter did not have any significance in practice. This can be seen in Examples 2, 4, 6, 8 and 10 and in Figures 2, 4, 6, 8 and 10. This was true even though the logs were classified logwise.

Quick relates to a densifiable wood pulp product, which can be incorporated into absorbent articles, such as diapers, feminine care products, and adult incontinence products. The densifiable product includes fibers having low coarseness, preferably having a fiber coarseness less than about 22 mg/100 m, and a densifying

agent. In another embodiment, the densifiable product further includes fibers having coarseness greater than about 22 mg/100 m.

It was discovered by Quick that a fibre coarseness of less than 22 mg/100 m could be reached by using treetops and wood from thinning. However, Quick neither examined the number of the trees' annual rings by log or groups of logs, nor divided the wood material into categories according to the number of annual rings. The wood was roughly divided into grown wood and young wood only and it was considered that the desired fibre coarseness would be reached in this way by taking some young wood or grown wood or both in certain proportions. The aim was to provide wood pulp products that were highly compressible and densified while maintaining softness. Another motivation was to optimize and efficiently utilize forest resources including previously underutilized forest products (see Col. 1, lines 45 - 50).

Skatter relates to X-ray imaging of internal structures of solid bodies, and in particular mapping of internal defects in the log, such as knots. The method tries to discriminate between knots and clear wood. Estimates of shape, density and knot location render improved sawing decisions at the headrig of a sawmill, which improves the yield of high quality lumber from a given log. As explained in paragraph [0006], lines 2-7, "[t]o optimize the output

of each individual saw log, information as to the shape and quality has to be known prior to sawing. ... In European softwood mills the logs are pre-sorted according to dimensions and sometimes quality." It is emphasized that Skatter is concerned only with wood material used in sawing and not in pulp manufacture. It is of course important to sort wood material for sawing, since the outlook of saw material is important. However, Skatter has nothing to do with fibre properties and pulping or paper or cardboard products produced from the pulp. The reference in Skatter to "dimensions", from the context of the disclosure, appears to mean log dimensions – not fibre dimensions. Skatter mentions location and number of annual rings in paragraph [0014], lines 5-8, among other information obtained by the techniques disclosed therein, but continues that, "[t]his information can then be used either to grade or sort logs according to knot properties, or it is used to optimize the sawing decision at the primary breakdown of the mill." (Lines 5-8).

Nothing is described in Skatter to suggest that location and number of annual rings obtained by the techniques disclosed therein have any relevance to fibre dimension properties and can be used to adjust the fibrous properties of a pulp and, more particularly, can be used to obtain a pulp product that includes fibers having low

coarseness as desired in Quick. No motive exists, therefore, to combine Quick and Scatter and proposed in the Action and such combination will not result in the method of the present invention as recited in the rejected claims.

Rydholm adds nothing to the disclosures of Quick and Scatter relevant to classifying wood by log or group of logs according to the number of annual rings into categories that represent a certain fibre dimension property.

Removal of the 35 U.S.C. 103(a) rejections of the claims is believed to be in order and is respectfully requested.

The foregoing is believed to be a complete and proper response to the Office Action dated April 4, 2006, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,
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